

Innovative Applications of DOD Propulsion Technology for Low-Cost Satellite Missions, Phase I

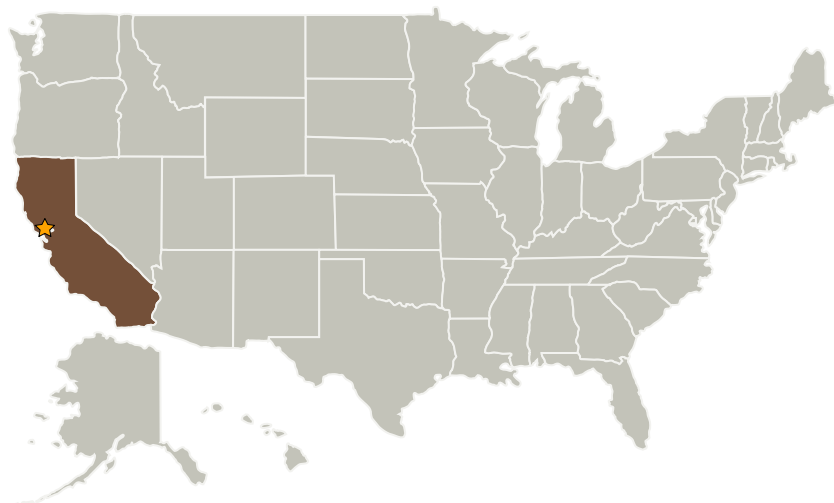
Completed Technology Project (2008 - 2008)



Project Introduction

We are proposing to leverage the Missile Defense Agency investments in high-performance propulsion systems for low-cost space missions with large Dv requirements, for example, a soft lunar lander. This design concept exploits a core set of hardware developed under past and current Department of Defense (DoD) investments. The propulsion system concepts under consideration are from the DoD's Missile Defense Kinetic Kill Vehicle programs such as EKV, THAAD, ASAT and LEAP. These are bipropellant, storable and hypergolic system that use high-performance propellants (MMH/NTO). This subtopic is seeking technologies with the superior performance for orbital control, for on-orbit applications including storage capability and propulsion. This propulsion system should allow transfers from LEO or GTO to lunar orbit or similar destinations. These missions have in common the substantial Dv propulsion requirements that cannot be met with the existing flown propulsion systems on current small spacecraft missions (for example, SNAP-1, Cubesats, Orbcomm or similar missions). Our proposed solutions offers that capability at an affordable but credible cost.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Stellar Exploration, Inc.	Supporting Organization	Industry	San Luis Obispo, California

Primary U.S. Work Locations

California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Tomas Svitek

Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.4 Advanced Propulsion
 - └ TX01.4.4 Other Advanced Propulsion Approaches